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PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

SIXTH LIST OF ADDITIONS TO THE FLORA OF
WASHINGTON, D. C. AND VICINITY.

BY EDWARD S. STEELE.

WITH DESCRIPTIONS OF NEW SPECIES AND VARIETIES BY
EDWARD L. GREENE, ALVAH A. EATON, AND
THE AUTHOR.

The following list is based upon a course of collecting prosecuted outside of my routine work for five years beginning with 1896. The general purpose has been merely to record names of new and less familiar plants, with stations; but advantage has been taken of the opportunity to publish a few descriptions of new local material and to record some observations.

Professor Greene has kindly furnished for publication here a name and character for a new violet which I was so fortunate as to discover. Mr. Alvah A. Eaton describes two new forms of *Isoetes*, which are not, however, my own discoveries. I propose a segregate from the *Lycopus virginicus* of authors, a well-marked species long since noticed, but apparently never properly named. In an extended note on *Vernonia glauca* I hope to have set that species in a somewhat clearer light. Other notes are scattered through the list.

I am indebted to several gentlemen for the revision of my determinations, particularly to Mr. L. H. Dewey, who studied all my earlier collections of grasses. The dichotomous Pani-

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THE GIFT OF
B. L. Robinson.

cums I have of late left wholly to the skill and kindness of Mr. E. D. Merrill, who is working with Professor Scribner in that trying field. Professor C. F. Wheeler has been referee for about all of the Carices that presented difficulties, and I am also the beneficiary of Mr. Geo. B. Sudworth, Mr. Frederick V. Coville, Mr. J. N. Rose, Mr. Charles L. Pollard, and others.

The arrangement of the list follows the sequence of Engler and Prantl, but the numbers prefixed are those of Professor Ward's Guide to the Flora of Washington and Vicinity (Bull. U. S. Nat. Mus. No. 22, 1881) and the subsequently published additions. In order to preserve the original numeration, and at the same time place the additions in their proper connections, the use of appended letters has been resorted to.

The prefixed asterisk denotes a species not hitherto recorded in print as belonging to our flora. In the case of a number of these species my collection has probably been anticipated by that of other collectors whose results have not been published, but it is not practicable wholly to avoid this injustice. On the other hand, some first collected by me have in the same manner been entered in an earlier list.

1217a. *Pteris aquilina pseudocaudata Clute. (*P. aquilina caudata* of American authors, not of Linnaeus).

Kenilworth, abundant near the railroad, September 20, 1900. Also near Hyattsville.

1233a. *Dryopteris spinulosa* (Retz) Kuntze.

In a ditch near Captain Jones' place beyond Chevy Chase Lake.

1234. *Dryopteris spinulosa intermedia* (Muhl.) Und.

Not seen near the city. Found at Suitland, near Kensington, and near Great Falls on the Virginia side.

1237a. *Onoclea struthiopteris* (L.) Hoffm.

A few sterile fronds, Plummer's Island, May 31, 1897.

1240. *Lygodium palmatum* (Bernh.) Sw.

In a drained swamp, eastern part of Suitland, Sept. 8, 1899.

1213a. *Equisetum robustum A. Br.

On both sides of Beaver Dam Branch, near the road. Rarely found in fruit.

1253c. *Isoetes saccharata Engelm.

In tide mud among coarse gravel along the bay at the mouth of Four Mile Run, August 5, 1898. The range as given in Britton and Brown's Flora is "Wicomico and Nanticoke rivers, eastern Maryland". The following varieties, though not of my own collecting, may be appropriately published in this place,

***1253d. *Isoetes saccharata* Palmeri** A. A. Eaton, var. nov.

Aspect of *riparia*. Leaves much stouter than in the type, 1 to 1½ dm. long, recurved; macrospores 500 to 550M, with markings taller and more confluent, strongly suggesting *riparia*.

This variety might easily pass for *riparia*, which has, indeed, happened several times; but the very narrow, almost obsolescent velum, the less tuberculate microspores, the smaller, more closely sculptured macrospores, and the dirty brownish color when dry, sufficiently distinguish it. The spores appear intermediate between *riparia* and the varieties of *echinospora* in sculpture, some of the markings being irregular walls, others broad, often forked spinules as in *Braunii*.

First collected by Mr. T. C. Palmer, of Media, Pa., at Lloyd's Creek, Sassafras River, Maryland, August 12, 1895, and by him ably characterized*. Specimens collected by Mr. Frederick V. Coville at the foot of the Washington estate, Mount Vernon, Va., do not fully agree, but apparently connect the variety with the typical form of the species.

Types in the herbarium of A. A. Eaton, the National Herbarium, and those of the Missouri Botanical Garden, the University of Minnesota, and the Linnaean Fern Chapter.—A. A. Eaton.

1253b. *Isoetes saccharata reticulata* A. A. Eaton, var. nov.

Smaller; leaves 10 to 20, slender, erect, vivid green, 1.5 to 2 dm. long, with abundant stomata; macrospores 400 to 432M, marked with low, parallel, anastomosing walls above and more or less regularly reticulate below.

The aspect of this plant also suggests *riparia* rather than *saccharata*. The spores sometimes resemble those of small *Tuckermanni* or even *Engelmanni*, but the walls are much lower, often mere threads. Occasionally a spore is found which bears parallel walls below as well as above.

Hunting Creek by the wagon bridge near its mouth, one mile below Alexandria, Va., July 22, 1888, Geo. Vasey and Frederick V. Coville; same station, September 22, 1900, Wm. R. Maxon, No. 365. Also tide beach, Anacostia river, Washington, D. C., September 1, 1900, E. S. Steele. Perhaps referred to by Palmer (l. c. p. 222). Type specimens are deposited in the herbaria mentioned in the description of the preceding variety.†—A. A. Eaton.

886. *Potamogeton Nuttallii* Cham. & Schlecht. (*P. Claytonii* of Ward's Catalogue.)

Common in the tributaries of the Eastern Branch.

885a. *Potamogeton amplifolius Tuckerm.

Mouth of Four Mile Run and Hunting Creek, also in Anacostia river, but flowers and fruit not seen.

893a. *Echinodorus radicans (Nutt.) Engelm.

Along a depression in the flats below Chain Bridge, perhaps a dozen

*Bot. Gaz. 4: 221. 1896.

†The Vasey and Coville specimen cited above is that determined by Theo. Holm in the third list of additions as *I. riparia* Engelm. It is hence given the same number, and the asterisk is omitted.—E. S. S.

specimens, some well developed, August 1, 1900. In Britton and Brown's Flora the northern limit of this species on the Atlantic coast is given as North Carolina.

***893. *Lophotocarpus calycinus* (Engelm.) J. G. Smith.**

Eastern Branch below Navy Yard, growing in tide mud; also below Alexandria, September 4, 1899. Apparently scarce within our limits.

***894a. *Sagittaria Engelmanniana* J. G. Smith.**

First collected, in sterile condition only, in a swampy pasture near Ardwick, Md., September 6, 1899. Two or three fruiting specimens were found on the water's edge at Great Falls, October 3, 1899. This extends the known range of the species, and proves that it is sometimes dioecious. Determination confirmed by Mr. J. G. Smith.

894b. *Sagittaria pubescens* Muhl.

Very common in swamps, springy places, and ditches, but in my experience not found in or close to open water. It reaches the edge of the river marsh, but I have not observed it far inside.

I have been somewhat inclined to regard this plant as specifically distinct from *S. latifolia*, and as Mr. J. G. Smith is willing to be quoted in support of this view, I feel warranted in restoring it. The leaves greatly resemble in form those of typical *latifolia*. They vary in length from 4 inches to a foot, including the lobes, and are rounded or obtusely angled at the apex, differing somewhat in the length of the lobes, which, however, are usually moderately shorter than the blade; but they do not run into the well known eccentricities of the *latifolia* forms. A very characteristic feature is found in the involucre bracts, which are at least as broad as long, of a yellowish white and translucent hue, and densely hirsute-pubescent.

***894c. *Sagittaria longirostra* (Michx.) J. G. Smith.**

In moderate quantity in the marsh around the mouth of Oxen Run, opposite Alexandria. August 18, 1900,

***1203a. *Andropogon Elliottii* Chapm.**

Brightwood Park Swamp, September 20, 1896; Connecticut Avenue Bridge, October 7, 1896.

***1204a. *Andropogon halepensis* (L.) Brot.**

Rather common around dumping grounds. The cultivated sorghum and broom corn also appear occasionally in these situations.

***1191a. *Panicum Walteri* Pursh.**

Shore west of bathing beach, September 2, 1897.

1178. *Panicum agrostoides* Trin. (*P. agrostidiforme* of Britton and Brown.)

River swamp, Brick Haven, October 10, 1896; also South Washington and below Alexandria.

***1178a. *Panicum longifolium* Torr.**

Kenilworth Swamp, August 28, 1897. Also swamp above Hyattsville.

1187a. *Panicum sphaerocarpon* Ell.

Flats near mouth of Oxen Run, July 1, 1899. Also Arlington.

- 1188f. **Panicum polyanthes** Schultes. (*P. microcarpon* of Ward's Catalogue.)

District Line, August 4, 1896. Also Four Mile Run.

1187. **Panicum Ravenelii** Scribn. & Merrill. (*P. pauciflorum* of Ward's Catalogue.)

Slope above Canal road, May 24, 1898, June 12, 1900.

- *1188e. **Panicum Scribnerianum** Nash.

Kenilworth, June 9, 1899.

1188. **Panicum dichotomum** L.

Of the *dichotomum* group I have, as determined by Mr. E. D. Merrill, besides *dichotomum* itself: *Atlanticum* Nash, *barbulatum* Michx., *Clutei* Nash, *Columbianum* Scribner, *commutatum* of authors, not of Schultes, *implicatum* Scribner (doubtful species), *lanuginosum* Ell., *laxiflorum* Lam., *lucidum* Ashe, *unciphyllum* Trin. The *lucidum* takes the place of *sphagnicolum* Nash as to this locality.

- 1192a. **Panicum miliaceum** L.

Waste ground, several places.

- *1180c. **Panicum capillare Gattingeri** Nash.

Plummer's Island, August 24, 1897. Also Great Falls and Bethesda.

- 1180b. **Panicum flexile** (Gattinger) Scribn.

Near Glen Echo, September 11, 1896; Linnaean Hill Road, September 27, 1899.

- *1180d. **Panicum minimum** Scribn. & Merrill. (*P. minus* of Britt. & Brown.)

South Arlington near Four Mile Run, August 27, 1899; also Bennings.

- *1193a. **Chaetochloa imberbis perennis** (Hall) Scribn. & Merrill.

Kenilworth, first half of August, 1898, and in many places since; most abundant near Beaver Dam Branch; also at Jackson City, and near Brightwood swamp. It appears to be most at home in swamps and moist ground, but I have seen it in dry soil at West Eckington and even on a dry southern slope near the Massachusetts Avenue Bridge.

1193. **Chaetochloa verticillata** (L.) Scribn.

Occurs occasionally in waste ground, but appears never to multiply much.

- 1172a. **Phalaris arundinacea** L.

Wet field, Jackson City, west of road, June 14, 1896 and June 6, 1899.

1117. **Aristida gracilis** Ell.

Arlington, near the river, and also on the Rockville road. The form known as variety *depauperata* Gray was found at Bennings, September 18, 1897.

1108. **Muhlenbergia Mexicana** Trin.

A form with long culms and slender panicles, corresponding presumably to the variety *filiformis*, was collected along the Glen Echo railroad. The type has been found in several places.

1110. *Muhlenbergia tenuiflora* (Willd.) B. S. P.

Arlington near Four Mile Run, August 27, 1899; Hyattsville, September 26, 1900, the latter specimens over 4½ feet long.

***1111a. *Muhlenbergia palustris* Scribn.**

The peculiarities of this grass were noticed in my collection of 1896, but it was distributed as *M. diffusa* for lack of a better determination. The next year attention was again called to the differential characters, which resulted in its description as a new species. Outwardly it is distinguished by its habit, which is even more slender than that of *M. diffusa*, and by its pink purple instead of dark purple hue. More closely examined, the development of the lower glume will be noticed as the distinctive feature. The type locality is Brightwood Park swamp, which forms the head of Piney Branch. It still exists here, but is suffering much from the spirit of improvement. The only other station known is the wet meadow south of Beaver Dam Branch, west of the Anacostia road.

1101a. *Sporobolus vaginaeflorus* (Torr.) Wood.

This species is now understood by the agrostologists of the Department of Agriculture as including *S. neglectus* Nash. A tuft with culms 2½ feet long was found on the Rockville road.

***1102a. *Agrostis intermedia* Scribn.**

Arlington, August 11, 1896; Chautauqua, August 17, 1896; also on the river near Cabin John, and on the wooded flats at Hyattsville.

1114a. *Calamagrostis Canadensis* (Michx.) Beauv.

Bladensburg, in swamp west of the railroad, found overripe in 1898, and in good condition June 17, 1899. Also seen in a swamp north of Beaver Dam Branch, west of Anacostia road.

1169a. *Arrhenatherum elatius* (L.) Beauv.

Now abundant near Kalorama, beyond Eckington, etc. I would call attention to the fact that our plant has not only the long awn on the lower flowering scale, but also an awn in a slit at the summit of the upper flowering scale. The cleft sometimes descends one-third the length of the scale, but is generally more shallow. The awn, which is upwardly barbellate, generally overtops the scale, but is sometimes about equal to it or even shorter.

***1123a. *Spartina cynosuroides* (L.) Willd.**

One small patch at Jackson City, east of the railroad. Seen in larger quantity on the river flats at Harper's Ferry.

***1123a. *Leptochloa fascicularis* (Lam.) A. Gray.**

Sewer, lower part of Duke street, Alexandria, September 4, 1899.

1140. *Eragrostis Eragrostis* (L.) Karst.

Parking southwest of Treasury Building, September 23, 1899; also in 1900.

***1143a. *Eragrostis pilosa* (L.) Beauv.**

Jackson City, August 3, 1896; also near Eastern Branch and Upper Paint Branch.

***1137a. *Poa flava* L.**

Near railroad north of North Brookland, July 22, 1896; not since seen.

1129. *Panicularia Canadensis* (Michx.) Kuntze. (*Glyceria*, of Ward's Catalogue.)

Terra Cotta Swamp, collected in overripe condition in 1896 or 1897; in good condition June 23, 1899. Seen also in a swamp south of Four Mile Run.

1128a. *Panicularia pallida* (Torr.) Kuntze.

Bladensburg, a short distance beyond the spring, June 17, 1899.

1130. *Panicularia fluitans* (L.) Kuntze.

Feeder Dam, May 28, 1897. Seen also at Bladensburg, not far from the spring.

***1151c. *Bromus purgans incanus* Shear.**

Plummer's Island, August 24, 1897; also Four Mile Run and near canal below Cabin John. This grass blooms two months later than *B. ciliatus*. Only a few of the upper leaves remain green at flowering time, commonly overtopping the surrounding vegetation.

***1151a. *Bromus unioides* (Willd.) H. B. K.**

Dumping grounds, May 28, 1898 and June 12, 1899.

***1151b. *Bromus inermis* Leyss.**

Dumping grounds, June 14, 1899; June 8, 1901.

***1151d. *Bromus maximus* Desf.**

Dumping ground, June 5, 1901.

***1156a. *Hordeum pusillum* Nutt.**

South Washington, 1896; Canal road, May 24, 1898.

***1156b. *Hordeum murinum* L.**

Dumping grounds, May 28, 1898.

989. *Cyperus microdontus* Torr.

Bladensburg, September 7, 1896. Anacostia road above Kenilworth, October 1, 1899, September 20, 1900. Seen also on the railroad a mile above Anacostia. Grows always in wet sand, and sometimes fruits at the height of an inch or two. This is doubtless the *C. Nuttallii* of Ward's Flora, as that species can scarcely occur here.

990a. *Cyperus inflexus* Muhl.

Margin of water, Jackson City, August 1, 1899; Chain Bridge, Virginia side, August 17, 1900. Has the fragrance when dried of slippery elm.

***991a. *Cyperus fuscus viridescens* Hoffm.**

Sewer at the foot of Duke street, Alexandria, September 4, 1899.

***991b. *Cyperus rotundus* L.**

A small patch on the waste ground west of the old fish pond, October 13, 1899.

993. *Cyperus strigosus* L.

Besides the type the varieties *compositus* and *robustior* seem to be distinguishable here, the former, however, not very common.

***997a. *Cyperus cylindricus* (Ell.) Britton.**

Near Kenilworth Swamp, September 18, 1897; Bennings, on the flats, July 15, 1899.

1003a. *Eleocharis olivacea* Torr.

One mile north of Berwyn, May 6, 1900.

***1006a. *Eleocharis tuberculosa* (Michx.) Roem. & Schult.**

Brightwood Swamp, July 24, 1897; Howard Hill Reservoir, very abundant, July 2, 1898.

***1003b. *Eleocharis capitata* (L.) R. Br.**

Howard Hill Reservoir, August 26, 1896; July 22, 1898.

1002. *Eleocharis obtusa* Schultes.

A clump of this species (following Mr. Fernald's revision) with culms over a foot-and-a-half tall was found in water at Four Mile Run.

***1002b. *Eleocharis obtusa jejuna* Fernald.**

Near Kenilworth.

1002a. *Eleocharis Engelmanni* Steud.

Damp path near Silver Hill, August 18, 1897; flats near Pennsylvania Avenue Bridge, June 29, 1897; also in the Howard Hill Reservoir.

***1003a. *Eleocharis palustris* R. Br. (Not of Ward's catalogue.)**

Swampy margin of river, opposite Alexandria, July 1, 1899. Not seen elsewhere.

1003. *Eleocharis glaucescens* (Willd.) Schult.

River swamp, Aqueduct Bridge, etc. Common. This is doubtless the *E. palustris* of Ward's catalogue.

1019. *Stenophyllus capillaris* (L.) Britton.

Specimens from low ground at Bennings had innumerable culms, many of them fifteen inches long.

1010. *Scirpus debilis* Pursh.

Bladensburg, near Terra Cotta; Chautauqua, across the canal; South Arlington.

1012. *Scirpus sylvaticus* L.

Lakeland at outlet of Lake, July 11, 1900.

1000a. *Hemicarpha micrantha* (Vahl) Britton.

Chain Bridge, Virginia side, August 19, 1900, a few specimens. Not seen elsewhere.

1021b. *Rynchospora corniculata macrostachya* (Lam.) A. Gray.

Eastern Branch swamp, on both sides.

1020. *Rynchospora alba* (L.) Vahl.

Brightwood swamp, in small quantity; Paint Branch swamps, abundant.

1020a. *Rynchospora gracilentia* A. Gray.

Swamp one mile north of Berwyn, July 28, 1900.

1020b. *Rynchospora cymosa* Ell.

Kenilworth swamp, June 20, 1898, a small amount. Swamp west of Anacostia road north of Beaver Dam Branch, August 5, 1898; Lakeland

near creek, July 8, 1900.

1022. *Scleria triglomerata* Michx.

Terra Cotta swamp, June 29, 1896. Seen since in Kenilworth swamp, on Fairfax road south of Four Mile Run, and at Lakeland.

***1024b. *Scleria reticularis pubescens* Britton.**

Paint Branch swamps and north of Kenilworth. Other material from the Brightwood swamp (August 16 and September 22, 1897) with thicker culms and broader leaves may be *S. Torreyana* Walp. Thus far I find it very difficult to separate these species.

1024. *Scleria pauciflora* Muhl.

Addison Heights, Chevy Chase, Glen Echo Heights, Anacostia road north of Kenilworth, Takoma Park, and Lakeland.

1090. *Carex lupulina* Muhl.

I have a form from the woods bordering the river marsh at Bennings determined by Professor Wheeler as "the variety near var. *pedunculata* Dewey". The peduncle of the sterile head is over 3 inches long.

1094. *Carex bullata* Schk.

Formerly in the Brightwood Park swamp; common in the swamps around Hyattsville.

***1088a. *Carex lurida exundans* Bailey.**

Very common. A form from the Potomac flats has some of the staminate heads fertile at the summit.

1087. *Carex hystrix* Muhl.

Canal at District line, May 28, 1897. Not common.

1085. *Carex comosa* Boott.

I failed to distinguish this from *C. pseudo-cyperus* until last season, but specimens from the Potomac flats seem decisive.

1092a. *Carex typhinoides* Schwein.

Lakeland, between the electric and steam railroad tracks, August 4, 1900.

1084. *Carex riparia* Curtis.

Seen by me only in the river marsh east of the Alexander Island race course.

1051. *Carex Shortiana* Dewey.

A few specimens in the Feeder Dam region, 1896. Abundant on the Potomac flats west of the Fish ponds, 1900.

***1051a. *Carex lanuginosa* Michx.**

Feeder Dam, May 21, 1898; river swamp, Alexander's Island, May 12, 1900.

***1048a. *Carex stricta angustata* (Boott) Bailey.**

Margin of bay, foot of seventeenth street, May 18, 1898; also north of Berwyn. This is not to be confounded with the *C. angustata* of Ward's catalogue, which is doubtless the typical *C. stricta*.

***1051b. *Carex fusca* All.**

Bog one mile north of Berwyn, May 6 and July 28, 1900.

***1061a. *Carex costellata* Britton.**

Ravine, District line, May 15, 1899; Cleveland Park region and Massachusetts avenue extended.

1062. *Carex triceps* Michx.

Besides the type, which is common, I have a form with the awns of the scales much longer than the perigynia, probably *C. hirsuta cuspidata* Dewey; the difference is very considerable. Eastern Branch region, June, 1896; District line, May 28, 1897.

***1062a. *Carex Caroliniana* Schwein.**

Feeder Dam, May 28, 1897; Conduit road near Cropley, May 30, 1899.

1059. *Carex gracillima* Schwein.

Glencarlyn, in overripe condition, June 6, 1898; Rock Creek above Military road, May 9, 1899; also on Cabin John Run.

1058a. *Carex amphibola* Steud.

More common in my experience than *C. grisea* Wahl.

1056. *Carex pallescens* L.

Woods beyond St. Elizabeth's; scarce.

1067. *Carex laxiflora* Lam.

In my judgment the forms still covered by this name include from two to five good species. It is quite impossible to regard *blanda* and *patulifolia* as varieties of the same species. The soft deep green or yellowish-green foliage of the former is wholly distinct from the firm glaucous or grayish-green blades of the latter, the basal portion of which survives the winter as in *C. platyphylla*, a habit shown in a far less degree by *blanda*. *C. patulifolia* further differs in its more numerous and densely tufted culms, its linear spikes, and its habitat, keeping as it does to the upland while *blanda* descends to moist flats. If this separation were made, the variety *divaricata* would go with *patulifolia*, provided it is not itself distinct. It differs from the latter in its larger and more stipitate fruit, its narrower leaves, the smaller number of culms, and the spreading habit, the culms standing at angles of about 45 degrees, while those of *patulifolia* are erect. The range of *divaricata* requires further observation. It is fond of wooded hillsides, the sides of ravines, etc. I have collected or observed it near Eastern Branch, east of Soldiers' Home, in Rock Creek Park, in the Cleveland Park region, and beyond Glen Sligo. I have the typical *laxiflora*, so determined by Professor Wheeler, (although the fertile spikes are dense and not at all like the figure in Britton and Brown) from near Chevy Chase and from the District line toward Cabin John.

1064. *Carex Careyana* Torr.

Scarce, but found on High Island and in the woods at Seven Locks.

1078. *Carex Pennsylvanica* Lam.

Specimens from the south slope of the ridge at Four Mile Run were said by Professor Wheeler to be the first true *Pennsylvanica* he had seen from Washington.

1077. *Carex nigromarginata* Schwein.

Ravine, Linnaean Hill road.

1030a. *Carex conjuncta* Boott.

Potomac flats, spring of 1900 and 1901.

***1030c. *Carex gravida* Bailey.**

Monument ground in grass, May 23, 1898; also May, 1901, doubtless introduced. Professor Wheeler observes: "While your plant is not quite so robust as this species from Illinois and Iowa, I cannot put it anywhere else."

***1030d. *Carex xanthocarpa* Bicknell.**

Near Fourteenth street extended, May 28, 1900; South Arlington, May 30, 1900; beyond Eckington, June 10, 1900. Seldom very yellow in color. Grows both in wet and in comparatively dry ground, but more vigorously in the former. Its discovery here extends the known range. Professor Wheeler thinks our plant may be var. *annectens* Bicknell.

***1040b. *Carex setacea* Dewey.**

Slope above Canal road, June 15, 1900; so determined by Professor Wheeler. An extension of the known range.

1037a. *Carex retroflexa* Muhl.

Seven Locks, May 9, 1898, very young. Also, Little Falls on the Virginia side, in the woods above Georgetown, and on Linnaean Hill road.

1034. *Carex Leavenworthii* Dewey. (*C. cephalophora angustifolia* of Ward's Flora).

Specimens thus named by Professor Wheeler were collected near Kalamazoo Heights, May 26, 1899. He notes that the perigynia surely indicate this species, although the specimens are taller than usual and have not the bracts which are commonly, though not always present. The bracts are present in specimens retained by me. Since communicating with Professor Wheeler I have re-collected this plant (Mount Vernon, May 30, 1901; original locality, June 8), and have also collected the species, of normal size, in the grass near the Monument, where it is well established, having doubtless been introduced in grass seed, I can find no material difference between the forms except in the length of the culms, which in our possibly native plant is often 2, sometimes even 3, feet, but in the Monument ground plant does not exceed 16 inches. The narrow leaves and smaller heads set the species apart from our very abundant *cephalophora*.

1035b. *Carex Atlantica* Bailey.

Common in boggy places. This is probably the *C. stellulata* of Ward's Flora.

***1035c. *Carex interior* Bailey.**

Wet ground, Glen Echo Heights, May 16, 1897; Feeder Dam, May 21, 1898; Mount Vernon, May 30, 1901.

***1035d. *Carex interior capillacea* Bailey.**

Bog east of Anacostia road south of Beaver Dam Branch, June 3, 1900. An extension of the known range.

***1035e. *Carex canescens* L.**

Swamp, Hyattsville east of creek, May 17, 1898.

1028. *Carex bromoides* Schk.

Known to me only from the wet woods opposite the race course on Alexander's Island, which is probably exactly Dr. Vasey's station. May 12, 1900.

***1040c. *Carex tribuloides moniliformis* (Tuckerm.) Britton.**

Potomac Flats west of railroad, June 3, 1900.

1045a. *Carex festucea* Willd.

One clump, Massachusetts avenue extended, May 26, 1899; also a clump near railroad north of Kenilworth June 3, 1900; in the latter specimen the culms are taller and somewhat nodding. Determined by Professor Wheeler.

1045b. *Carex alata* Torr.

Swampy flat at Jackson City, east of road, June 18, 1896 and June 14, 1897; Mount Vernon, 1901.

1045c. *Carex albolutescens* Schwein.

Kenilworth swamp, June 20, 1898, overripe; also above Hyattsville, in swamp west of creek.

875. *Peltandra Virginica* (L.) Kunth.

In specimens from the Potomac flats and from above Aqueduct Bridge the seeds, as first noticed by Mrs. Steele, are nearly black when ripe, not green, as stated in the descriptions.

***879a. *Lemna perpusilla* Torr.**

Abundant in still water near canal at Widewater, October 3, 1899, and at Chautauqua.

***879b. *Lemna minor* L.**

What I take to be this species occurs in the old fish pond together with *Spirodela*.

986. *Eriocaulon decangulare* With.

Formerly very abundant at Brightwood swamp. Found also at Takoma Park and in one or more of the Paint Branch swamps.

986a. *Eriocaulon septangulare* With.

Abundant on the tide beach at Four Mile Run, July 31, 1896.

976. *Juncus Torreyi* Coville. (*J. nodosus* var. *megacephalus* of Ward's Catalogue.)

Jackson City and Howard Hill reservoir.

***978a. *Juncus Canadensis brevicaudatus* Engelm.**

Boggy ground at Bennings, September 7, 1899. Determined by Mr. Coville.

960. *Tofieldia racemosa* (Walt.) B. S. P.

One of the Paint Branch swamps, September, 1899, 1900.

958. *Stenanthium robustum* S. Wats.

Abundant in the Hyattsville swamp west of the creek; collected in fruit August 25, 1900.

956. *Melanthium Virginicum* L.

Formerly in Terra Cotta Swamp; now abundant in the swamps south of Arlington; also north of Berwyn.

956. *Veratrum viride* Ait.

Magnolia Run, and in a swampy pasture on the Columbia Pike, south part of Arlington.

947. *Unifolium Canadense* (Desf.) Greene.

Seen abundantly along the banks of a stream in Suitland in 1899 and 1900.

944. *Polygonatum commutatum* (R. & S.) Dietr. (*P. giganteum* of Ward's Catalogue.)

Even small plants growing on uplands seem to belong to this species rather than to *P. biflorum*.

934. *Smilax glauca* Walt.

In a note under this species Britton and Brown refer to "a form with numerous small prickles on the lower part of the stem, and more elongated, sometimes halberd-shaped leaves", named *S. spinulosa* by J. E. Smith. I was hereby reminded of a plant I had found at Bennings, and by further observations I learned that the young stems of *S. glauca* frequently have the leaves narrowed, commonly to a lanceolate and long-acuminate form, and that, with or without the peculiar leaves, such stems are apt to be prickly.

***924a. *Narcissus biflorus* Curtis.**

Near Kalorama Heights, May 14, 1899. This is a genuine escape, as a good many plants were found scattered about a grassy field.

928. *Iris cristata* Ait.

Seven Locks and Little Falls on the Virginia side.

***928a. *Iris Pseudacorus* L.**

Has spread from the old fish pond into a tributary ditch.

931a. *Sisyrinchium Atlanticum* Bicknell.

Takoma Park, May 27, 1900; Kenilworth swamp, June 3, 1900.

931. *Sisyrinchium angustifolium* Mill.

A remarkable display of this plant was seen on a hill on the Conduit road in 1900. Some of the clumps, which were very numerous, must have contained 200 or more culms. The spathes were deep purple.

901. *Habenaria clavellata* (Michx.) Spreng.

A good many specimens were found in a moist place part way up the ascent at Arlington August 11, 1896. Since found in small quantity near the Reform School, at Magnolia Run, and in the woods adjoining the river marsh, Bennings.

902. *Habenaria flava* (L.) A. Gray.

Woods on river marsh, Bennings; a good supply.

903. *Habenaria ciliaris* (L.) R. Br.

Before its discovery in Kenilworth swamp I was told by a resident of Takoma Park that this plant grew near the railroad station there, in the spot where I later found it.

904. *Habenaria lacera* (Michx.) R. Br.

One or two specimens on high ground, Cabin John. A larger amount in Kenilworth swamp and in the swamp north of Beaver Dam branch. Also a specimen at Magnolia Run.

***904a. *Habenaria peramoena* A. Gray.**

A single specimen at Feeder Dam.

910. *Gyrostachys simplex* (A. Gray) Kuntze.

Connecticut Avenue Bridge, August 26, 1897; Ardwick, September 6, 1897.

915. *Achroanthos unifolia* (Michx.) Raf.

Glen Echo Heights (Mrs. Steele), September 13, 1899, in fruit.

917. *Leptorchis Loeselii* (L.) MacM.

Fruiting specimens were found in the Howard Hill reservoir, July 2, 1898, and on the Leesburg pike toward Great Falls, September 18, 1899.

867. *Populus grandidentata* Michx.

Terra Cotta and Lakeland.

868. *Populus deltoides* Marsh.

None of the specimens I have met with are clearly native. A male and female, perhaps forty feet high, stand on the flats at the iron bridge over Rock Creek near Massachusetts avenue extended, and other examples occur on the Potomac flats.

866. *Salix purpurea* L.

One tree was found on the Potomac flats east of railroad, April 20, 1900.

833. *Quercus macrocarpa* Michx.

The only tree I have seen stands in the woods on the bluff above the canal, at the District line.

838. *Quercus prinoides* Willd.

Specimens about two feet high, in flower, Bladensburg, May 17, 1898; also banks of Rock Creek above Military road and on the adjacent ridge, the last much larger.

806. *Celtis occidentalis* L.

The only specimen known to me stands by the road half a mile above Cabin John.

806a. *Celtis pumila* Pursh.

The restoration of this species by Mr. E. J. Hill (Bull. Torr. Club, 27: 496) is welcome. Common in the up-river region; seen also at Marshall Hall and on the Giesboro Road. Mainly on the flats but sometimes on the bluffs.

***811a. *Morus alba tatarica* Sieb. & Zucc.**

A tree thus determined by Mr. Sudworth stands in the waste ground below the old observatory, and the same variety occurs along the Canal road. It fruits freely.

807. *Humulus lupulus* L.

Field near Tenleytown Junction; roadside south end of Chain Bridge;

Captain Jones' place near Chevy Chase Lake. Also on a brook above the Dalecarlia reservoir remote from dwellings.

***807a. *Humulus Japonicus* Sieb.**

Waste ground, September 30, 1899, pistillate flowers.

816. *Parietaria Pennsylvanica* Muhl.

High Island and slope above Canal road.

***787a. *Asarum reflexum ambiguum* Bicknell.**

Moist woods, different places near District line on Cabin John R. R., May 28, 1901.

781. *Rumex verticillatus* L.

Flats above Aqueduct Bridge, Virginia side, June 2, 1896.

***780. *Rumex Patientia* L.**

Dump ground, June 5, 1901.

778. *Polygonum scandens* L.

While some of our specimens have the calyx wings somewhat indented, the great mass of our material certainly belongs to this species. I note in some specimens fruits that are almost wingless mixed with the others. I have one collection which may prove to be *P. cristatum*.

752a. *Chenopodium album viride* (L.) Moq.†

Not uncommon in waste grounds.

753. *Chenopodium Bosclianum* Moq.

Woods, Brick Haven, Va., September 3, 1897; first noticed here by Mr. L. H. Dewey.

755. *Chenopodium murale* L.

Found several times in waste places around the city, also at First lock. Rather common at Harper's Ferry.

***758a. *Chenopodium rubrum* L.**

Potomac flats, October 9, 1897; abundant.

758. *Chenopodium anthelminticum* L.

I have found only a single specimen belonging to this species. Mr. Dewey also found one on the experiment grounds of the Department of Agriculture. The absence of bracts from most of the racemes, as well as the greater length of the latter, are essential characters.

***749a. *Amaranthus blitoides* S. Wats.**

Waste grounds, river front near Fourteenth street, September 20, 1897.

749. *Amaranthus graecizans* L. (*A. albus* of Ward's Flora.)

Waste places in and around the city. Seen abundantly in a garden in Suitland.

***751a. *Acnida tamariscina* (Nutt.) Wood.**

I collected in 1897 or 1898 one or two specimens of this species on the Potomac flats dumping ground.

†*Chenopodium botrys* L. was collected at Harper's Ferry in September, 1900, but I have not yet found it within our limits.

***125a. *Portulaca grandiflora* Hook.**

Waste ground, September 19, 1900.

106. *Silene alba* Muhl. (*S. nivea* of Ward's Catalogue).

Feeder Dam, Plummer's Island, Rock Creek flats near Captain Jones' place.

***109a. *Silene antirrhina divaricata* Robinson.**

Kensington, July 4, 1899; overripe at this date. Probably same, High Island and First lock. Perhaps a good species.

120. *Sagina decumbens* (Ell.) Torr. & Gray.

Congress Heights, May 16, 1898.

121. *Tissa rubra* (L.) Britton.

Crevices in sidewalk, head of Fourth street; road west of Georgetown.

124a. *Scleranthus annuus* L.

Street north of old observatory, May 4, 1898.

***38a. *Cabomba Caroliniana* A. Gray, var.**

Leaves of this plant were collected by Mr. Dewey and myself in Beaver Dam Branch near its entrance to Eastern Branch in September, 1897, but its identity was not then made out. I collected the plant in flower September 1, 1900, in the river a little below the Navy Yard Bridge. As *Cabomba* is known to have been planted in the Eastern Branch for use in aquaria, it has doubtless spread from that source, and it may now be considered as established. There is a specimen in the National Herbarium from one of the fish ponds, collected by Dr. Vasey, which is said to be introduced from the Patapsco River.

Our plant has the decided peculiarity that all of the floating leaves except the two lowermost, and sometimes these also, are lobed at the base, giving the leaf a sagittate form. In the ordinary descriptions these leaves are said to be entire, but Gray in the *Illustrated Genera* says "or emarginate". The cleft in our plant perhaps never reaches down to the petiole, but it is usually far deeper than would be indicated by the term emarginate. The specimen from the Patapsco River seems to have the same peculiarity. Some of the material planted in the Eastern Branch is said to have been brought with goldfish from Japan, but this is probably a mistake, as there is no species of *Cabomba* reported from that country. This is presumably a form or variety of *C. Caroliniana*, but it would be interesting to know where it is native.

24. *Delphinium tricornе* Michx.

A single plant on the mainland near Plummer's Island, Maryland side, May 13, 1900.

26. *Aconitum uncinatum* L.

Near Tenleytown Junction, on Glen Echo Heights, and near Linnaean Hill road.

***9a. *Anemone Canadensis* L.**

Woods below Congress Heights, May 25, 1898, in a moderate patch.

1. Clematis ochroleuca Ait.

On the ridge at Four Mile Run; hill near St. Asaphs; Arlington near Naucks, and woods west of Georgetown (one plant).

13. Ranunculus pusillus Poir.

Border of pond, Bladensburg pike, May 4, 1898.

12. Ranunculus obtusiusculus Raf.

Eastern Branch marsh at Bennings road, south side.

22. Ranunculus acris L.

Though occasionally found, I doubt if this is well established at any point within our range.

15. Ranunculus micranthus Nutt.

Hillside above Chain Bridge; near Kendall Green.

6. Thalictrum purpurascens L.

Feeder Dam Island; Plummer's Island; Seven Locks. This is a gregarious plant of rank growth, although not very tall.

***7a. Thalictrum coriaceum** (Britton) Small.

Common on hillsides, among thickets, etc.

5. Thalictrum dioicum L.

Well-shaded banks, Rock Creek Park; Little Falls on the Virginia side.

40. Papaver dubium L.

Plummer's Island; abundant along New-cut road near Conduit road and on a neighboring estate May 30, 1899.

45. Fumaria officinalis L.

Occurs occasionally in waste ground, and was found in considerable quantity in the truck land near Bellevue Magazine, and even on the uncultivated hillsides, in 1898.

***76a. Lepidium apetalum** Willd.

Waste ground, Holmead Manor, May 15, 1898; dumping ground, river front, May 28, 1898; Eckington, May 25, 1900.

78. Thlaspi arvense L.

Potomac flats, one specimen, 1900. This plant is evidently not established here.

***78a. Thlaspi perfoliatum** L.

Waste ground north of Virginia avenue, May 15, 1898; a considerable patch.

68a. Sisymbrium altissimum L.

Below the old Naval Observatory, in fruit, June 7, 1897; since seen in several places, but apparently not spreading.

***74a. Brassica Napus** L.

Becoming very abundant.

***74b. Brassica juncea** (L.) Coss.

Chain Bridge station, July 4, 1896; later at Anacostia and on dumping ground on the Potomac flats.

52. *Barbarea Barbarea* (L.) MacM.

A form corresponding to *B. vulgaris arcuata* A. Gray was collected on a roadside at Cleveland Park, May 14, 1899.

52a. *Barbarea stricta* Andr.

Potomac flats near dumping ground, May 11, 1898.

49a. *Roripa hispida* (Desv.) Britton.

Jackson City, August 1, 1899.

62d. *Cardamine arenicola* Britton.

Very abundant in moist ground on the Potomac flats east of the railroad, 1900.

A *Cardamine* appearing intermediate between this and *C. Pennsylvanica* and growing on dry wooded hills requires further attention.

62a. *Cardamine parviflora* L.

Woods, Kendall Green.

72a. *Camelina microcarpa* Andr.

This name applies to all the specimens I have seen, and probably to all those formerly taken as *sativa*. This plant was observed quite over-running a field on New-cut road east of Conduit road, May 30, 1899.

56. *Arabis patens* Sulliv.

South slope of the High Island ridge, in fruit, May 21, 1898.

71. *Erysimum cheiranthoides* L.

Plummer's Island, June 22, 1897; Potomac flats, July 10, 1899.

***71a. *Conringia orientalis* (L.) Dumort.**

A single specimen on dumping ground, rear of propagating grounds, in 1899.

***79a. *Cleome spinosa* L.**

Dumping ground on New-cut road, July 14, 1890. Seen in the previous year near Pennsylvania avenue southeast, and in 1900 on dumping ground along the river front.

249. *Spiraea salicifolia* L.

This can no longer be considered rare, as it has been observed in Kenilworth swamp in small quantity; at the foot of the long hill on the Glen Echo railroad; in a swamp in south Arlington; near Sligo, Maryland (Pollard); and on the edge of a bog north of Berwyn.

254. *Rubus argutus* Link.

Our common high-bush blackberry. I am as yet uncertain whether or not we have *R. nigrobaccus* Bailey.

***256a. *Rubus trivialis* Michx.**

Bennings, and swamp above Hyattsville.

254a. *Rubus Enslenii* Tratt. (*R. villosus humifusus* of Ward's Flora.)

High ground near Dalecarlia reservoir, May 15, 1896; Seven Locks, May, 1897. Later found at Lakeland, etc., and probably very common. Trattenick's and Torrey's type specimens, as shown in Bailey's "Evolution of our Native Fruits," pp. 363 and 376 differ as to the form of the leaves. Both forms can be duplicated from our material. Our plant has

commonly one blooming stem of last year's wood, a young shoot for the year to come, and often a dead stalk of the preceding year. Fruiting stem often only from one to two feet long and ascending or nearly erect.

***255a. *Rubus villosus roribaccus* Bailey.**

A plant thought to correspond to this name grows near the First lock and on higher ground near the adjacent District line. The stems are 4 or 5 feet long, spreading, not prostrate, sometimes low, but often 2 or 3 feet from the ground. One clear case of rooting at the tip was observed. The prickles are slender, but formidable, especially on less vigorous branches, where they multiply. Only trifoliate leaves have been observed, but others may exist on young shoots. The leaflets are oval or oblong lanceolate, the larger 3 inches long by $1\frac{1}{2}$ inches wide, doubly serrate with cuspidate teeth, finely appressed pubescent beneath, in a less degree above. The splendid flowers have the petals (including the claw) an inch long, suborbicular, slightly ovate or obovate. Fruit not yet seen. The whole plant is on a larger scale than *R. villosus* (*R. Canadensis* of authors) and when it is well known it will certainly be regarded as a distinct species. Possibly it is a different plant from Professor Bailey's.

261. *Geum vernum* (Raf.) Torr. & Gray.

Woods north of Glen Echo railroad, April 29, 1900.

267. *Alchemilla arvensis* (L.) Scop.

A few specimens in dry ground near Holmead swamp, 1898.

***268a. *Agrimonia mollis Bicknellii* Kearney.**

Linnaean Hill road, August 18, 1899. I had noticed the peculiarity of this form before I saw its description by Bicknell (Bull. Torr. Club 23: 547, 1896).

264. *Rosa humilis lucida* (Ehrh.) Best.

I have specimens at least approaching this variety, from beside the railroad near Cowdon's station, south Arlington.

278a. *Malus angustifolia* (Ait.) Michx.

A small tree apparently of this species stands west of the railroad on the edge of the dumping ground at Eckington, (May 25, 1900). The leaves almost duplicate those of a specimen from Florida so determined by Nash. There is a specimen in the U. S. National Herbarium, collected I think by Dr. Parry in 1871, credited to the District of Columbia. If this determination proves correct it will be a fair question whether the trees mentioned in Ward's Flora as *Pyrus coronaria* are not also of this species.

***287a. *Amelanchier spicata* (Lam.) Dec.**

Great Falls, May 30, 1899, in fruit. Mr. Sudworth says he has found this near the city.

281. *Crataegus cordata* (Mill.) Ait.

Roadside, Riggs road beyond the Northwest branch; a grown tree with numerous progeny.

***283. *Crataegus rotundifolia* (Ehrh.) Borek.**

Dry woods, Riverdale, May 19, 1901. Specimen seen also from beyond Tenleytown

***285. *Crataegus flava* Ait.**

Roadside, south Arlington, July 8, 1899, in fruit.

***285b. *Cotoneaster pyracantha* (L.) Spach.**

Two bushes along a fence, New-cut road near Conduit road, May 30, 1899. I looked in vain for fruit in November, 1900.

***246a. *Prunus cuneata* Raf.**

Bank of ditch one mile north of Berwyn, May 6, 1900.

***246b. *Prunus Avium* L.**

A large spreading tree thought to belong to this species, Glen Echo Heights, in flower. April 29, 1900. Also a large specimen with the habit of a forest tree, either *P. Avium* or *P. Cerasus*, in the woods above Aqueduct Bridge, Virginia side. Both these species, according to Mr. Sudworth, have run wild here.

***246c. *Prunus Mahaleb* L.**

In the valley east of Cleveland Park, May 7, 1896; now destroyed. Border of the Woodley woods toward Cleveland Park, May 11, 1899, with green fruit.

199a. *Trifolium dubium* Sibth.

Near Conduit road beyond the District line, May 15, 1896; not then recognized. Later near Cleveland Park, etc.

***196a. *Trifolium incarnatum* L.**

Roadside, Bladensburg pike, May 17, 1898.

***200a. *Amorpha fruticosa* L.**

A well-grown specimen stood in waste ground at the rear of the propagating grounds, and was in flower May 28, 1898.

***217a. *Melbomia arenicola* Vail.**

Dry bank, Suitland, September 8, 1898.

***217b. *Melbomia glabella* (Michx.) Kuntze.**

Hillside above First Lock, August 31, 1897; Woodley Park, September 15, 1899.

***223a. *Lespedeza Nuttallii* Darl.**

Woodley Park, August 27, 1897; near Ardwick, September 6, 1897; Paint Branch region, September 3, 1900. The collection here extends its known range.

***219a. *Lespedeza frutescens* (L.) Britton.**

A narrow-leaved and a broad-leaved form.

220a. *Lespedeza striata* (Thunb.) H. & A.

Since the publication of Ward's Flora this has been introduced, and has spread far and wide. On gravel along railroad tracks it sometimes takes the form of a mat.

***226a. *Vicia villosa* Roth.**

On dumping ground, September 2, 1897; seen frequently since.

225. *Vicia tetrasperma* (L.) Moench.

Takoma Park, 1896; Giesboro road, 1899.

226. *Vicia hirsuta* (L.) Koch.

Waste ground, Potomac flats; among the truck lands below Anacostia.

224. *Vicia sativa* L.

I have plants with narrow and with broad leaves; the latter are perhaps distinct from *V. angustifolia* Roth, but the separation is not easy.

***229a. *Vigna Catjang* L.**

Found occasionally on dumping grounds.

231a. *Falcata Pitcheri* (Torr. & Gray) Kuntze.

Abundant in the river swamps; also occurs near streams back from the river.

229b. *Dolichos Lablab* L.

Found on several occasions on dumping grounds.

153a. *Oxalis corniculata* L.

Abundant on the Agricultural grounds not far from the building. Collected with flowers and fruit December 4, 1900.

153b. *Oxalis filipes* Small.

Common. Blooms from May to the end of September, the stem gradually elongating and falling over, but not rooting. My specimens show pretty clearly, however, that this plant develops some short, creeping stems.

153. *Oxalis stricta* L.

Common. Begins blooming a little earlier than *O. filipes*, and seems to finish mainly by the end of June, but it is found more or less in flower throughout the summer, the stem elongating moderately. It forms little clumps of stems with a decumbent base which may be two or three inches long. Besides the transverse ridges there are two well-defined longitudinal ridges on the face of the seed and a groove on its margins.

153c. *Oxalis cymosa* Small.

Very common. Begins to blossom late in May and continues throughout the season, the stem elongating greatly.

153d. *Oxalis grandis* Small.

Plummer's Island, June 22, 1897.

144a. *Linum medium* (Planch.) Britton.

More abundant than *L. Virginianum*, the species easily distinguishable. The difference between these plants was clearly explained in Ward's Flora.

***99b. *Polygala cruciata* L.**

Brightwood swamp, August 16 and September 22, 1897. Also in the Paint Branch swamps in some quantity, and at Lakeland.

97. *Polygala viridescens* L.

Flats opposite Alexandria, July 1, 1899. Only station found by me.

99a. *Polygala Curtissii* A. Gray.

Addison Heights, July 22, 1896, abundant. Also at Bennings and Bladensburg. Perhaps our most common species.

100b. *Polygala Nuttallii* Torr. & Gray.

Near Brightwood swamp, July 24, 1897; since collected on the flats opposite Alexandria, and one mile north of Berwyn. It seems to prefer the vicinity of swamps.

102a. *Polygala Senega latifolia* Torr. & Gray.

Common. Our plant, however, seldom has the leaves "2 inches long", and some specimens growing with the others have the leaves nearly or quite narrow enough for the type.

801. *Phyllanthus Carolinensis* Walt.

This plant can no longer be regarded as rare. I have collected or observed it on denuded banks in the up-river region, on the electric road near St. Asaph's, on the gravelly flats, especially west of the road at Jackson City (abundant), at a point on Riggs road near Northwest Branch, and near Bladensburg.

***801a. *Crotonopsis linearis* Michx.**

In a flat moist field perhaps three-quarters of a mile north of Berwyn, July 28, 1900.

802a. *Acalypha gracilens* A. Gray.

The smaller grayish leaves (often broader than would be expected from the figure in Britton and Brown's Flora), and the slender outer branches of the typical form separate this fairly from *A. Virginica* in general appearance. The protrusion of the staminate flowers from the involucre is not a reliable character, as some of the finest *Virginica* I have seen has them well exerted. On feeble plants or branches the involucre is sometimes almost obsolete. A low, stout form of this species occurs on broken ground without the slender branches, and with an abundance of small leaves and fruit.

***800a. *Euphorbia dentata* Michx.**

Sandy field, Seven Locks, September 25, 1897; waste ground, river front, very abundant in 1900. Common about Harper's Ferry. The variation in the width of the leaf is quite extraordinary.

798. *Euphorbia Ipecacuanhae* L.

Sandy knoll, Hyattsville, east of creek, May 4, 1898; near Lutheran Home, May 11, 1901.

799. *Euphorbia dictyosperma* Fisch. & Mey.

Near Captain Jones' place beyond Chevy Chase Lake, and in great abundance in a meadow opposite Forest Glen, May 17, 1900.

305a. *Callitriche heterophylla* Pursh.

What I take to be a form of this was collected in a warm pool at Great Falls, May 30, 1899. The broad leaves are entirely absent. Normal form, Bladensburg, June 27, 1897.

184. *Rhus aromatica* Ait.

This plant is rather common around Harper's Ferry, and also in the

vicinity of Manassas, and may therefore be looked for on our southern border as well as in the up-river region, where, as reported by Ward, our only specimen has been found.

163. *Euonymus Americanus* L.

Common. I enter this name in order to note that the *E. Americanus obovatus* of Ward's Flora is doubtless a mistake, as the true *obovatus* is very distinct, and its occurrence here, so far as I know, has not been confirmed.

***176a. *Acer pseudo-platanus* L.**

Spontaneous along New-cut road in the hollow above Georgetown College grounds; leaves collected November 11, 1900.

174. *Acer saccharum* Marsh. (*A. saccharinum* of Ward's Catalogue.)

A tree of some size, but partially blown over was seen in a ravine at Widewater; also a grown tree in a similar condition on Plummer's Island. Many seedlings were scattered about the last named locality.

***178a. *Cardiospermum Halicacabum* L.**

Dumping ground, Eckington, July 28, 1898. Also later at different places on the Potomac flats.

155. *Impatiens biflora* Walt. (*I. fulva* of Ward's Catalogue.)

Many specimens with pinkish and mottled flowers were found growing with the ordinary form on boggy ground at Bennings, September 7, 1899.

172. *Vitis rupestris* Scheele. (*V. vulpina* of Ward's Catalogue.)

Near Great Falls and Chain Bridge.

138a. *Sida hermaphrodita* (L.) Rusby. (*Sida Napaea* Cav.)

Potomac flats, both sides of the railroad and near the old fish pond, July 27, 1896, and later.

142a. *Hibiscus Syriacus* L.

Escaped on the grounds of the old observatory (July 6, 1898), and probably elsewhere.

142r. *Hibiscus Trionum* L.

Propagates itself in my yard, where it was planted several years ago.

***142c. *Gossypium herbaceum* L.**

Waste ground, Potomac flats, October 25, 1900; several plants with flowers and ripe bolls.

129a. *Hypericum densiflorum* Pursh.

A few good plants in the bog one mile north of Berwyn, July 28, 1900. The bushes were about five feet high.

133a. *Hypericum majus* (A. Gray) Britton.

Howard Hill reservoir, August 26, 1896.

80. *Helianthemum Canadense* (L.) Michx.

Kenilworth, Suitland, and near Takoma Park. I do not find the species easy to distinguish when in fruit, but the Takoma specimens, the only ones seen in flower, belonged to *H. Canadense*.

81. *Lechea minor* L.

I have failed to find this plant anywhere except at Lakeland, where I

saw a few individuals. It is possibly not rare; but I suspect that the material formerly referred here belongs partly or wholly to one of the following species.

81a. *Lechea racemulosa* Michx.

Hyattsville, September 7, 1896; later at Lakeland, Congress Heights, and in the Paint Branch region. Plants gathered at the last station September 3, 1900, have the fruit and leaves of *racemulosa*, but are most remarkable in habit, forming low, bushy, and extremely dense clumps, heavily laden with fruit. A few specimens in the National Herbarium somewhat approach them. They were on ground which had been burned over the previous year.

81b. *Lechea tenuifolia* Michx.

Addison Heights, July 25, 1896. Probably our most common species.

***88a. *Viola Brittoniana* Pollard.**

Moist ground north of Berwyn, May 6, 1900; later seen near Lakeland. Adding these stations to that of Mr. Pollard's at Hyattsville, it may be expected that this violet will be found at intervals along the low ground from Bladensburg to Berwyn and perhaps farther.

86c. *Viola sororia* Willd.

Woods, Forest Glen, May 17, 1900.

82. *Viola lanceolata* L.

Bennings, both in the wet ground near the railroad and the low ground towards the river; low ground above Riverdale.

86a. *Viola affinis* LeConte.

Abundant in woods at foot of bluff on the Giesboro road some distance beyond Congress Heights, April 27, 1899. Seen also on the Potomac flats east of the railroad.

84. *Viola cucullata* Ait.

Boggy ground beyond Silver Hill, May 25, 1899, and at points in Suitland.

***84a. *Viola laetecaerulea* Greene, n. sp.**

Acaulescent, with short, stout, branching rootstock, the foliage at time of petaliferous flowering upright, 4 to 7 inches high, distinctly hirsutulous, the young and growing peduncles, petioles, and cucullate unexpanded leaves often rather densely so: leaves from rounded or subreniform-cordate to cordate-ovate, and $1\frac{1}{2}$ to $2\frac{1}{2}$ inches long, evenly and very distinctly crenate, obtuse, light green; peduncles stoutish, scarcely equalling the petioles; sepals oblong, obtuse, very narrowly scarious-margined, often more or less plainly serrulate-ciliolate; petals rather broad, well rounded, indistinctly veined, the odd one very conspicuously shorter and every way smaller than the others, all light-blue, the lateral ones with a strong tuft of hirsute subclavate or perhaps flattened white hairs; apetalous flowers and their capsules on short horizontal and more or less completely subterranean peduncles; capsules oblong.

In sandy loam, open ground, Potomac flats below Long Bridge, a few clumps only, these closely associated with an abundant growth of *V.*

papilionacea. Specimens were collected April 27, May 1, and May 10, 1900, those of the first date not yet in full bloom, those of the last past their prime. Apetalous flowers May 28, 1901. Duplicate type material is deposited in the U. S. National Herbarium. In autumn, while *V. papilionacea* was still green and flourishing, no traces of *V. laetecerulea* could be found; and this again seems to indicate its affinity for *V. cucullata*. However, the plant is certainly a near relative of the common and very beautiful *V. papilionacea* of Pursh. At the same time, it curiously simulates the real *cucullata*, that is, the glabrous pale-green blue-flowered bog-meadow violet, in not only the color of the corollas and the pale-green herbage, but even in the form of the leaves, length of leaf-stalks, etc., etc.

The species is to me the most interesting new one of all that I have been called upon to name and describe in recent years: and this because of the fact that in the volume of LeConte's colored drawings done eighty years since, and now in my possession, just this plant is the subject of one of his most beautiful figures; and I have for several years been wondering when this almost mythical plant, so clear in its specific characters according to LeConte's pencil and brush, would make its appearance, and where it would come from. I had studied the plate so often, and had the character and aspect of the species so well in mind that instantly upon beholding Mr. Steele's specimens, I felt sure of their identity with what LeConte so long ago had drawn and painted, but had never published or even named.

There is, however, a Latin note in LeConte's handwriting under the figure, which may be rendered thus: "Differs from the common *V. cucullata* by the width and rotundity of its petals, the odd one being small, as in *V. palmata*. The petals are not venulose. The petioles are sometimes villous."

In reading this note of his, it must be remembered that by *V. cucullata* LeConte meant not what I have established to be true *cucullata*, i. e., the bog-meadow plant, but rather the *V. papilionacea*.—*Edw. L. Greene*.

85a. *Viola domestica* Bicknell.

I find a violet agreeing with the description of this near Captain Jones' place beyond Chevy Chase Lake, at Widewater, and in other places, but my observation tends to confirm the view of Mr. Pollard that this is only a variety or form of *V. papilionacea*.

89a. *Viola Labradorica* Schrank. (*V. canina sylvestris* of previous lists.)

A good many plants of this species have grown in a little glen along Rock Creek above the entrance of Piny Branch, where it was noticed especially in 1899. Seen also above Military Road; but it is a scarce plant.

325. *Opuntia Opuntia* (L.) Coult.

Plummer's Island, June 22, 1897.

307. *Rotala ramosior* (L.) Koehne. (*Ammannia humilis* of Ward's Catalogue)

This plant is common in very wet places along the river (Chautauqua, Jackson City, Hunting Creek, Bennings). Instead of the 2 to 6 inches of the Illustrated Flora it grows with us from 6 to 12 inches high, and a similar stature is shown by some specimens in the National Herbarium. It branches freely when there is space, but when crowded the stem tends to be simple. Alternate with the acute divisions of the calyx at its four corners are broad appendages which fold inward over the ovary. The flowers do not seem to be "very small".

310. *Decodon verticillatus* (L.) Ell.

In the swamp about the mouth of Oxen Run, August 18, 1900, then coming into bloom; a small number of specimens.

***311a. *Chamaenerion angustifolium* (L.) Scop.**

I saw a plant of this species at Takoma Park in 1896 or 1897.

311. *Epilobium coloratum* Muhl.

The form *umbrosa* Haussk. was collected at Bethesda, September 9, 1899. The leaves are very large.

318a. *Kneiffia longipedicellata* Small.

Near Bladensburg, June 27, 1896. Not rare in the eastern part of our territory. It grows in open ground; when well developed it is a very fine plant, far more handsome than *K. fruticosa*.

350. *Aralia racemosa* L.

Found by me only on Pimmit's Run, where there were a good many fruiting specimens on August 19, 1900.

***352a. *Hedera Helix* L.**

A patch of the common ivy was seen in the woods below Congress Heights in 1897 or 1898.

348a. *Caucalis Anthriscus* (L.) Huds.

Of late years this plant has spread extensively on the Potomac flats, and should it reach cultivated grounds it might prove troublesome.

***329a. *Eryngium planum* L.**

There were several specimens on the Massachusetts avenue terrace in the summer of 1899, and also in 1900.

331. *Sanicula Marylandica* L.

Near Chevy Chase, at Glencarlyn, and in a ravine at Glen Echo.

330a. *Sanicula gregaria* Bicknell.

Feeder Dam Island, May 15, 1896; later along the river on the Virginia side above Aqueduct Bridge, at Cabin John Bridge, and in a shady valley beyond Cleveland Park, June 2, 1898, at which time I became acquainted with Bicknell's description.

***338b. *Foeniculum Foeniculum* (L.) Karst.**

Seen once on the Canal road and once on the Potomac flats dumping ground. It does not establish itself here.

***339a. *Chaerophyllum bulbosum* L.**

West of the fish pond, with flowers and fruit June 27, 1899; bulbs were

collected the following spring. This plant greatly resembles *Conium maculatum* in general appearance. It seeds freely, and the seeds spring up abundantly around the old plant, but it does not appear to increase much.

338a. *Scandix pecten-Veneris* L.

Dumping place near propagating grounds May 3, 1898; also on Massachusetts Avenue extended.

331a. *Conium maculatum* L.

Rock Creek ravine near M street bridge, July 11, 1898; very abundant during that and the following season. Also on waste ground near Virginia Avenue, and on dumping ground at New-cut Road.

***340a. *Carum Carui* L.**

Two plants were collected on the river-front dumping ground in 1898.

356a. *Cornus circinata* L'Her.

A specimen of this species was brought by a lady to the Department of Agriculture from Takoma Park in 1899.

563a. *Clethra alnifolia* L.

One of the Paint Branch swamps, September 23, 1899; Berwyn, July 28, 1900; also at another point north of Berwyn, and in considerable quantity near the creek at Lakeland. This fine shrub can therefore be considered as definitely belonging to our flora.

***557a. *Azalea viscosa hispida* (Pursh) Britton. (?)**

A plant was found in sphagnous ground south of Four Mile Run, also one at Nauck's, agreeing exactly with some local specimens of *A. viscosa glauca*, except that the flowers were of a rich flesh color instead of pure white. This suggests variety *hispida*; but the specimens seen were of low stature, and the pedicels were not more hispid than those of some specimens of *glauca*.

I am of the opinion that the plant which has passed as variety *nitida* here is only a state of variety *glauca*. This is not to say that there is not a true *nitida* elsewhere.

556. *Kalmia angustifolia* L.

One of the Paint Branch swamps. September 3, 1900, in fruit.

554. *Leucothoe racemosa* (L.) A. Gray.

The best stations I have found for this plant are: Bennings near the railroad, and flats opposite Alexandria near the bluffs.

***544a. *Gaylussacia dumosa hirtella* (Ait.) A. Gray.**

South of the electric road junction, Takoma Park, June 7, 1897. First noticed by Mr. T. H. Kearney on the same occasion. I have not found this plant since.

***544b. *Vaccinium atrococcum* (A. Gray) Heller.**

Bennings, April 13, in flower; Kenilworth swamp, May 10 and June 13; in ripe fruit, 1898.

575. *Lysimachia quadrifolia* L.

The form with all the leaves opposite was found at Lakeland, July 8, 1900, and seemed to be common.

577. *Lysimachia Nummularia* L.

A large patch on a roadside at Bladensburg; also on Potomac flats near the dumping ground.

572. *Steironema lanceolatum* (Walt.) A. Gray.

To Professor Ward's localities may be added Kenilworth swamp, and low ground north of Beaver Dam Branch.

574. *Steironema quadriflorum* (Sims.) A. S. Hitchc. (*S. longiflorum* of Ward's Catalogue).

Seen by me only on the river bank above Chain Bridge on the Virginia side, coming into bloom July 4, 1896.

579a. *Centunculus minimus* L.

A few specimens near Bladensburg.

601b. *Polypremum procumbens* L.

One plant at Kenilworth, August 11, 1898.

603. *Gentiana Saponaria* L.

I have both stout and very slender specimens (the latter from Takoma Park) which it seems necessary to refer to this species.

606. *Bartonia Virginica* (L.) B. S. P.

Kenilworth swamp and one of the Paint Branch swamps.

589. *Asclepias rubra* L.

Sparingly in Kenilworth swamp and north of Beaver Dam Branch; also in the Paint Branch region, but more abundant in a swamp on the Columbia pike, south Arlington.

590. *Asclepias purpurascens* L.

Glen Echo railroad at foot of the long hill, June 24, 1898.

596. *Asclepias quadrifolia* Jacq.

Woods near Chevy Chase railroad and on Plummer's Island; very scarce.

599. *Ampelanus albidus* (Nutt.) Britton.

Not rare along the canal, and once observed near Tenleytown Junction. Also in various places at Jackson City, where fruits were collected September 21, 1898.

601. *Vincetoxicum hirsutum* (Michx.) Britton. (*Gonolobus*, of Ward's Catalogue.

On a bluff off from the Giesboro road, May 20 and July 22, 1899. The shape of the cup in the corolla agrees better, however, with that assigned to *V. Carolinense*.

600. *Vincetoxicum obliquum* (Jacq.) Britton.

Abundant on the slope above the canal road.

***630a. *Quamoclit Quamoclit* (L.) Britton.**

Steadily self-propagating in my yard; also dumping ground, Potomac flats.

630. *Quamoclit coccinea* (L.) Moench.

Suitland, cultivated ground, September 8, 1899; later, several places on the dumping grounds.

631. *Ipomoea hederacea* Jacq. (*I. Nil.*, of Ward's Catalogue.)

Corn field on the way to Plummer's Island, August 24, 1897; also Great Falls, Jackson City, and Chain Bridge.

635. *Convolvulus spithameus* L.

Suitland road and south Arlington, near Cowdon's station.

640b. *Cuscuta polygonorum* Engelm. (*C. chlorocarpa* of Ward's Flora.)

Mr. L. H. Dewey collected this plant near Four Mile Run in October, 1898, and he has so determined specimens collected by me on the Potomac flats, August 3, 1900.

609. *Phlox maculata* L.

Swampy places in south Arlington: low ground north of Riverdale.

614a. *Hydrophyllum Canadense* L.

Ravine at Chain Bridge station, August 1, 1900, in fruit; a limited number of specimens.

617a. *Phacelia dubia* (L.) Small.

High Island, and at various points in the Seven Locks region.

616. *Phacelia Purshii* Buckl.

Plummer's Island, May 31, 1897.

629a. *Heliotropium Europaeum* L.

Street in Alexandria, September 28, 1897.

***627a. *Asperugo procumbens* L.**

Dumping ground, along the river front at various points, May 3 and May 28, 1898.

628a. *Lycopsis arvensis* L.

A single plant in waste ground, U street between Seventeenth and Eighteenth streets, June 16, 1897; also in the previous year, the same individual.

***731a. *Scutellaria incana* Muhl.**

Near the canal at Chautauqua, August 17, 1896, then past its prime; not since met with.

732a. *Scutellaria parvula* Michx.

Linnaean Hill road, May 18, 1899.

729. *Scutellaria saxatilis* Ridd.

Rediscovered on the Virginia shore about a mile above Chain Bridge, October 7, 1900; seen at Harper's Ferry the previous September.

***735a. *Dracocephalum parviflorum* Nutt.**

Fugitive specimens were collected on U street in 1896.

713. *Koellia mutica* (Michx.) Britton.

Paint Branch bottom, near Berwyn, September 3, 1900; the only time it has been seen by me. I have collected all the other species mentioned in Ward's Flora.

***707a. *Lycopus Sherardi* n. sp. (*L. Virginicus* Michx. and many authors, at least in part; not Linnaeus).**

Perennial by filiform branching stolons bearing pairs of leaves $\frac{1}{2}$ inch

long or less, often mere bracts; stems erect or ascending, more or less branching, in exceptional cases 3 feet long, commonly from 15 inches to 2 feet, the internodes 1 to 2 inches long, dark green or partly purple, sparingly or rather densely clothed with a short grayish upwardly appressed pubescence; leaves $1\frac{1}{2}$ to 3 inches long, the upper portion ovate or ovate-lanceolate, with an entire acuminate point $\frac{1}{4}$ inch long or less, rather coarsely dentate or serrate, below strongly incurved-cuneate and entire, forming a margined petiole of varying length which tapers quite down to the verticillasters; the leaves when young bright purple, becoming dark green; verticillasters many-flowered, commonly very dense, sometimes somewhat looser, small or (perhaps only abnormally) large; flowers very small, the calyx 4-toothed or sometimes 5-toothed, the teeth ovate or narrower, acutish; the corolla long-exserted, distinctly shorter than that of *L. Virginicus*; one or two sterile filaments occasionally, but not always discernible.

The description is based chiefly upon material from the vicinity of Washington, D. C., where the plant is common in mucky soils and on the wet river flats. The exceptionally robust specimens referred to grew on the Potomac flats. The U. S. National Herbarium contains, besides local material, specimens from Maine, Connecticut, West Virginia, Kentucky, Tennessee, and South Carolina, showing a distribution over the coastal plain and southwestward in the mountains, without indication of high altitude.

Linnaeus founded his *Lycopus Virginicus* on Gronovius. The latter in his *Flora Virginica*, edition of 1762, quotes the Linnaean character and that of his own first edition, adding: "Ab hac verticillis magis approximatis, et foliis profundius serratis differt *Lycopus Canadensis* glaber foliis integris dentatis D. Sherard, quae species nomine *Lycopi* flore minimo albo, foliis purpureis glabris acuminatis serratis, odore remisso n. 181 inscripta." As the plant above described is beyond reasonable doubt the same as Sherard's, it seems fitting to note this historical connection in its name. The verticillasters, indeed, are not always "more approximate", but they may very well have been so in the specimens observed by Gronovius, as they are sometimes only an inch apart. The leaf margin is more deeply toothed than in *Virginicus*, the flower is smaller than in any other of our species, and the leaves are the only decidedly purple ones I have seen and are smooth and acuminate. The stem is indeed not glabrous, but the pubescence is not very obtrusive, and would not make a strong point against a description in most respects so good. I have made no note regarding the odor.

707. *Lycopus Virginicus* L.

I have made a partial study of the remaining *Virginicus* material in my possession and in the National Herbarium, and the judgments formed may perhaps be of interest. Excluding for the present *L. macrophyllus* Benth., and variety *quercifolius* Pursh, the remaining material includes some forms which considered by themselves might seem worthy of specific distinction. But these distinctions are not borne out, and some of our local material can scarcely be placed on one side of the line rather

than the other; nor do I find even varietal differences. Bentham's *macrophyllus*, on the other hand, seems likely to be at least a good variety. The leaves are much enlarged and sinuate-lobed. If this merely occurred here and there with the type we might explain it as due perhaps to a combination of shade and rich soil; but on the contrary it has a somewhat self-consistent range which is far from identical with that of the type, namely, from Oregon eastward through Nebraska and Minnesota to northern and central Michigan. There is also a Missouri specimen that seems to belong to this. Bentham cites Pursh's variety *quercifolius* as a synonym, of which the locality is given as the high mountains of Virginia. As the National Herbarium contains no specimen from that region, I can express no opinion concerning it. It is conceivable that this plant of rather northern range is represented in the Allegheny Mountains, however. If the two are found identical, the name *quercifolius* would take precedence of *macrophyllus*.

708. *Lycopus rubellus* Moench.

River swamp, foot of First street, southeast, September 21, 1896; Hunting Creek and Eastern Branch swamp at M street extended, September, 1899. There is also a specimen in the National Herbarium collected by Dr. Vasey near Chain Bridge. The specific name doubtless refers to the pinkish color of the stem.

***709. *Lycopus Europaeus* L.**

Virginia shore of the Potomac above Aqueduct Bridge, September 29 1900, two specimens.

705 *Mentha Piperita* L.

"The Point" at Jackson City, and on the Canal road; not abundant in either locality.

***706a. *Mentha rotundifolia* (L.) Huds.**

Cultivated ground in front of the Agricultural building, 1900.

***644a. *Physalis ixocarpa* Brot.**

Neglected ground near dwellings, water front at foot of Fifteenth street, September 30, 1899. It fruited abundantly and appeared again in 1900.

***644b. *Physalis Virginiana* Mill.**

This species or one which I cannot distinguish from it sometimes grows on very low ground, even in the river marsh. On the Potomac, flats (August 8, 1896) stems a yard long, lying prostrate on the ground, were observed. The ordinary form, above the railroad trestle beyond Chevy Chase Lake, September 12, 1900.

***642a. *Solanum Dulcamara* L.**

Seen by me only as a dump plant along the river front in 1899.

***642b. *Solanum pseudocapsicum* L.**

A number of specimens of the Jerusalem cherry were found on the margin of dumping grounds on New-cut Road, November 11, 1900. Some were in fruit, and there were a few flowers. The plant probably escaped from the refuse of some greenhouse.

648a. Capsicum sp.

A single plant was found in the last-mentioned locality; it was taken home and replanted, and bore fruit of a conical form.

***648b. Petunia violacea** Lindl.

A purple petunia, doubtless of this species, appears occasionally on the dumping grounds.

***662a. Gratiola sphaerocarpa** Ell.

Pond near Bladensburg pike, May 17, 1898; ditch at Lakeland, Md., August 4, 1900; scarce.

***662a. Gratiola viscosa** Schwein.

Eastern Branch swamp south of Bennings road, August 29, 1899; M street extended, September 16, 1899; mouth of Beaver Dam Branch, August 11, 1900. Abundant, especially in the last locality.

663a. Ilysanthes attenuata (Muhl.) Small.

Jackson City, August 1, 1899; Bennings, August 29, 1899, less common than *I. gratioloides*. Though on young stems of *gratioloides* the peduncles scarcely exceed the leaves and though on old branches of *attenuata* the peduncles may exceed them, on the whole the peduncles of the former are much longer, sometimes a full inch in length. In my specimens the leaves of *attenuata* are larger, and it has a much greater tendency to root at the nodes.

664. Micranthemum micranthemoides (Nutt.) Wettst. (*M. Nuttallii* of Ward's Catalogue).

Still growing at Hunting Creek, September 4, 1899.

667. Veronica scutellata L.

Feeder Dam, July 22, 1897.

679. Pedicularis lanceolata Michx.

Still found at Hunting Creek, September 4, 1899, at that date just coming into flower.

686a. Utricularia subulata L.

Howard Hill reservoir, abundant, May 22, 1899.

***686b. Utricularia biflora** Lam.

Specimens collected on the flats at Chain Bridge, August 16, 1899 and August 1, 1900, seem to belong to this species, and an earlier collection near the Second lock is perhaps the same. If this determination is correct it would throw some doubt upon the existence of *U. gibba* recorded in Ward's Flora, although of course it is possible we have both.

***688a. Catalpa Kaempferi** Sieb. & Zucc.

A tree determined by Mr. Geo. B. Sudworth as a hybrid of this species stands near Virginia Avenue and Eighteenth street, appearing as if spontaneous.

***692a. Martynia Louisiana** Mill.

Dumping ground, river front, August 22, 1900, a single plant; in fruit later. Flowers rather small and numerous; perhaps not this species.

691. Ruellia strepens L.

A remarkable plant perhaps belonging to this species was collected

near the canal at First lock, June 9, 1897, The flowers are single and borne on leafy-bracted axillary peduncles after the manner of *R. pedunculata* Torr. The calyx segments, however, are lanceolate, not awn-like, and the bracts, though much larger, have about the form of those found in the flower clusters of *R. strepens*.

689. *Ruellia ciliosa* Pursh.

My material includes a simple-stemmed cinereous plant found in dry woods, the calyx-segments very hirsute, and a coarser plant with spreading and geniculate-ascending branches, found in open and moister ground, with the calyx-segments less hirsute.

***373a. *Oldenlandia uniflora* L.**

Bennings, low ground toward the river swamp, August 29, 1899.

376. *Galium Claytoni* Michx.

Eastern Branch Swamp. Doubtless the *G. trifidum* of Ward's Flora.

***382a. *Galium tinctorium* L.**

South Arlington near Cowdon's station, June 5, 1898; near Silver Hill, May 26, 1899.

***620b. *Asperula arvensis* L.**

A single specimen found on dumping ground in 1897 or 1898.

***363a. *Viburnum molle* Michx.**

Kenilworth, June 11, 1899; also at First Lock, near Tenleytown Junction, in Terra Cotta swamp, and near Eckington. I present this name with great confidence, notwithstanding the fact that the stellate pubescence in our plant is almost 'obsolete on the under side of the leaf and often scanty elsewhere. It holds out best on the petioles of the upper leaves and on the peduncles. In one collection from Terra Cotta there are remains of a soft stellate pubescence in the axils of the veins on the lower leaf surface; but usually the pubescence in this situation appears simple and undistinguishable from that of *V. dentatum*. A specimen came to the Department of Agriculture from near Baltimore with a thin soft stellate pubescence on the whole under surface of the leaf. The pubescence on the petioles is stiff and very different, although also stellate. In two distinct cases this species was found flowering when *V. dentatum* was advancing into fruit. In one instance *dentatum* seemed to be blooming late. I have not fully verified the fruit characters, but the drupe seems larger than the *V. dentatum*.

***360a. *Viburnum cassinoides* L.**

A bush found in the sphagnous ground at Takoma Park was in flower while the more common *nudum* was in bud, and being in other respects different from that species, appears fairly to belong to *V. cassinoides*.

365. *Trilostemum angustifolium* L.

I have had one or two specimens from the railroad level at Glen Echo.

369. *Lonicera Japonica* Thunb.

Found near Naucks with decidedly red flowers.

383. *Valeriana pauciflora* Michx.

Abundant on Plummer's Island as well as on High Island.

386. *Valerianella radiata* (L.) Dufr.

Great Falls, May 30, 1909,. Also Potomac flats and Mount Vernon.

***324a. *Micrampelis lobata* (Michx.) Greene.**

Waste ground, July 21 and September 19, 1898.

***543b. *Campanula rapunculoides* L.**

In an old graveyard, Woodley, June 13, 1896; neglected ground, Massachusetts Avenue extended, June 13, 1899.

543a. *Campanula aparinoides* Pursh.

Tenleytown Junction and Glen Echo Heights, in swales.

543. *Campanula Americana* L.

On the slope above Canal road, and I think also on Pimmit Run.

***529a. *Lactuca hirsuta* Muhl.**

Flats opposite Alexandria; Linnean Hill road, etc. The pubescence in our plant appears to be confined to the stem, except for a few hairs on the midrib of the veins beneath.

***525a. *Crepis pulchra* L.**

This appeared in some quantity in June, 1898 and 1899, on the dump near the propagating grounds.

***524a. *Hieracium Marianum* Willd.**

One or two specimens believed to be this were collected in 1896 in the woods on the Virginia shore of the Potomac some distance above Aqueduct Bridge.

525. *Hieracium paniculatum* L.

Woods near one of the runs at Takoma Park, August 11, 1897; hillside east of Zoological Park, August 3, 1897. The specimens of the latter collection were remarkable on account of the relatively stout stem and elongated panicle.

***533a. *Nabalus albus integrifolius* (Cass.) Britton.**

Bladensburg, September 6, 1896; Glen Echo Heights, September 3, 1899.

470a. *Xanthium strumarium* L.

Plants collected at Rosslyn, September 13, 1900, come within the description of Britton and Brown; and others collected near the canal at the District line September 18, 1896, I would on the whole also refer here. The *X. strumarium* of Ward's Flora must have been mainly *X. Canadense*.

388. *Vernonia noveboracensis* (L.) Willd.

Common in low ground. For the sake of comparison with the next, I note here that this species is frequently of a bushy habit, the stem emitting straight, slender, ascending branches, bearing the heads clustered at the ends; that the inflorescence is composed of such branches, only shorter, and that when the stem is more strict it still tends to send out some such branches from the axils below the inflorescence proper; that the leaves vary somewhat in width and amount of pubescence beneath, but not surprisingly; that the awns of the involucre bracts are rather flexuous, erect in bud, later usually conspicuously spreading, but rarely

reduced in length to mere cusps; and finally, that the pappus is of a purple brown color, fading grayish.

388a. *Vernonia glauca* (L.) Britton.

Serratula glauca L.

Vernonia Novboracensis latifolia A. Gray.

Vernonia Novboracensis tomentosa Britton. Not *Chrysocoma tomentosa* Walt., nor *Vernonia tomentosa* Ell.

Mostly on hills; Linnaean Hill road, Rock Creek Park, Glen Echo Heights, and various points on the Virginia side of the Potomac. Also at Harper's Ferry, particularly on Maryland Heights, at an altitude of 1,000 feet. I have given much outdoor attention to this plant, and as it does not seem to be well understood, I subjoin a revised description:

Stem slender to medium stout, strict nearly or quite to the inflorescence, striate-angled, puberulent. Leaves light green above, pale and puberulent or glabrate beneath, the larger from 5 to 7 inches long, and from $1\frac{1}{4}$ to nearly 3 inches wide, the upper portion oblong or oval, acuminate or at least acute, below more or less abruptly incurved-contracted into a margined petiole tapering nearly or quite to the insertion, the narrow portion of variable length; the upper leaves smaller and more nearly cuneate at the base; inflorescence spreading and rather flat-topped, the branches stout, zigzag, densely puberulent, sometimes a little tomentose; involucre about 3 lines broad, the scales cuspidate, subulate-acuminate, or short-awned, the exposed portion purple throughout, or green with purple edges and tips, webby-ciliate, the awn, when present, often more or less upwardly barbellate; pappus straw-colored, from nearly white to a rather bright yellow; achenes from one-fourth to one-fifth as thick as long.

The diagnosis in the Hortus Elthamensis of Dillenius, upon which the Linnaean *Serratula glauca* was based, alludes to the light-colored pappus, but recent authorities have taken no account of this conspicuous and substantial character, nor do they seem to have attached any importance to the peculiar contraction of the lower part of the leaf, nor to have laid any stress upon the difference, in comparison with *Novboracensis*, in the habit and inflorescence. As to the involucreal scales, the copious material examined shows that they are commonly either abruptly contracted into a short or long cusp, or gradually narrowed to a subulate point with no fast line between the two types, the cuspidate form being, however, the more common. This account, moreover, is sustained historically: for the figure in the Hortus Elthamensis represents the bracts, not, indeed, as awned, but as subulate-acuminate, and Dr. Gray states that "the [Linnaean] specimen has many aristate-tipped bracts". To accept Dr. Britton's description of the bracts as "acute or mucronate" would be to throw out a large part, if not all of the material I have seen, and indeed to leave much of it without a name; for aside from the fact that it is not *Novboracensis* at all, a large portion would be excluded from the variety *tomentosa* Britton by the characters, "leaves densely puberulent beneath" and "involucre purple", as the pubescence is not generally very dense, and the involucre is not seldom

predominantly green. Further than this, the *Chrysocoma tomentosa* of Walter and the *Vernonia tomentosa* of Elliott are narrow-leaved plants. Elliott lays stress on this character, and Walter's expression is so distinct that nothing short of clear herbarium evidence could justify us in referring to his species a plant with the leaves above described. Besides this, the National Herbarium contains two specimens that are almost certainly the *tomentosa* of Elliott, and barring herbarium evidence unknown to me, probably that of Walter also. They are characterized by their linear-lanceolate, scantily and finely serrate leaves, which are whitish or grayish tomentose beneath, and by the rough and tomentose inflorescence, almost exactly the characters given by Elliott. Mr. T. H. Kearney, Jr., who collected one of these specimens in southern Virginia, states that it is the most hydrophile of the [eastern] *Vernonias*, actually growing in shallow water. Elliott's plant correspondingly grew in ditches. The awns of Mr. Kearney's specimen are broken off, but in the other specimen of the two above referred to, collected by C. F. Hyams in South Carolina, the awns are present and well developed, although I am not prepared to say that they are longer than in normal *Noveboracensis*. I am accordingly inclined to regard Elliott's species as valid, and Mr. Kearney also favors that view.

There is in the National Herbarium a specimen collected by Professor Alexander Winchell in Alabama, which has the pappus and the leaf-form of *V. glauca*, though the leaves are rather smaller; but the latter are densely puberulent and the awns are long for *glauca*. This might be the variety *tomentosa* of Britton were it not for the long awns; it belongs, however, not to *Noveboracensis*, but to *glauca*.

390c. *Eupatorium maculatum* L.

Kenilworth, September 27, 1898. My specimens fail to show the flat-topped corymb.

*395a. *Eupatorium serotinum* Michx.

The only station known to me for this species is a point on the Eastern Branch flats a mile above Benning's road.

391a. *Eupatorium altissimum* L.

Specimens from Bethesda Park and elsewhere agree in form of leaf with the figure in Britton and Brown's *Flora*; but collections from along the river at Glen Echo, Chautauqua, and Great Falls show a remarkable broadening of the leaf without increase of length. The width sometimes reaches $1\frac{1}{2}$ inches. Compare *Kuhnia eupatorioides*.

*400a. *Eupatorium cannabinum* L.

A single specimen on the edge of the tide-bed at Hunting Creek on the Alexandria side, a few rods from the wagon road, September 4, 1899. Only a part of the plant was taken and it may be found again.

403. *Kuhnia eupatorioides* L.

Specimens were collected September 18, 1899, on the side of the ravine at Difficult Run with the larger leaves ovate-lanceolate, contrasting widely with the linear-lanceolate form which is common here. This

form is mentioned in Gray's Synoptical Flora. In the original description the leaves are characterized as broadly lanceolate.

404. *Lacinaria scariosa* (L.) Hill. (*Liatria* of Ward's Catalogue).

A few specimens from the roadside and the side of the ravine at Difficult Run, September 18, 1899. This, with previously reported collections, proves that this plant truly belongs to our flora, and is perhaps native.

405. *Lacinaria graminifolia* (Walt.) Kuntze.

Specimens with white corollas were found east of Bladensburg pike, September 25, 1898.

410. *Solidago flexicaulis* L. (*S. latifolia* of Ward's Catalogue).

Plummer's Island and the declivity on the Virginia side above Chain Bridge.

***423a. *Solidago Elliottii* Torr. & Gray.**

In swamp at Kenilworth, September 18, 1897; also above Hyattsville on the west side of the creek, on Paint Branch about three miles above Berwyn, and in Suitland. The specimens agree reasonably with each other and with the description.

***423b. *Solidago neglecta* Torr. & Gray.**

Kenilworth swamp, September 18, 1897; also in one of the Powder Mill swamps, and at Hyattsville, east side of creek.

415. *Solidago rigida* L.

The station in Woodley Park, on the slope facing the bridges, has for some years afforded a good many specimens, but is in danger of obliteration from close pasturing.

***412a. *Solidago juncea ramosa* Porter & Britton.**

A few specimens near the Glen Echo railroad in 1896.

411. *Solidago nemoralis* Ait.

Specimens with erect instead of recurved racemes, giving the plants a very unusual appearance, were collected September 23, 1896, near the Soldiers' Home. It may be compared with the preceding.

***423c. *Solidago Canadensis procera* (Ait.) Torr. & Gray.**

Near the Rockville railroad beyond Bethesda, September 30, 1900.

***428a. *Aster divaricatus persaliens* Burgess.**

A form near this was collected August 27, 1899, south of Four Mile Run near Cowdon's.

***428b. *Aster Schreberi* Nees.**

Plants supposed to be this were collected August 18 and September 27, 1899, on the Linnaean Hill road.

***435a. *Aster cordifolius alvearius* Burgess.**

Canal road, and bluff on the Virginia shore above Chain Bridge.

***434a. *Aster undulatus loriformis* Burgess.**

This or an approximating form, Upper Paint Branch, September 23, 1899; also various places in the Rock Creek region.

***437a. *Aster phlogifolius* Muhl.**

Woodley Park, September 28, 1896, not then recognized; Linnaean Hill road, September 27, 1899; high land a mile or two from Great Falls, Maryland side, October 3, 1899.

448. *Aster Novae-Angliae* L.

Abundant at points on the Conduit road. A fine growth also on the Potomac flats in 1900.

***445. *Aster puniceus firmus* (Nees) Torr. & Gray.**

Tide marsh, Brick Haven, October 10, 1896; foot of First street south-east, September 21, 1897.

446. *Aster prenanthoides* Muhl.

At various points up the river, from near Chain Bridge to Great Falls, particularly across the canal at Cabin John. Never abundant.

***433a. *Aster laevis Potomacensis* Burgess.**

Connecticut Avenue Bridge, September 21, 1896; M street extended near Eastern Branch, September 16, 1899; Leesburg pike near Difficult Run, September 18, 1899.

429a. *Aster elodes* Torr. & Gray.

Very abundant in boggy ground. It is time to break the habit of calling this a variety of *A. Novi-Belgii*.

***429a. *Aster Radula* Ait.**

Not only at the main Paint Branch station (here first collected by Mr. H. W. Olds, I think,) but also a mile further east. In boggy ground at Suitland, September 8, 1899, I found a much altered form with but one to three heads, the leaves merely very finely scabrous.

442. *Aster salicifolius* Lam.

Feeder Dam, Hunting Creek, and Great Falls. This is, of course, the *A. carneus* or *A. aestivus* of Ward's Flora, but I have not met with anything to match the other name.

***443a. *Aster paniculatus acutidens* Burgess.**

Potomac flats, October 9, 1897.

430. *Aster lateriflorus* (L.) Britton. (*A. miser* of Ward's Catalogue.)

Of the now recognized varieties, I think I can distinguish *grandis* Porter, from Alexander's Island, and *pendulus* (Ait.) Burgess, from Takoma Park.

450. *Doellingeria umbellata* (Mill.) Nees.

Takoma Park, mainly near electric railroad junction, October, 1898, 1899. Rare.

450a. *Doellingeria humilis* (Willd.) Britton.

Rather common in boggy ground, Terra Cotta, Bennings, etc. The leaves of this species are not relatively as broad as might be expected. This I suspect is wholly or in part the *Diplopappus umbellatus* of earlier record.

449. *Doellingeria infirma* (Michx.) Greene. (*Diplopappus cornifolius* of Ward's Catalogue).

The specific name doubtless refers to the procumbent tendency of one

form. This habit seems surprising in the same species with forms that are rigidly erect, but I have failed to find other differences.

***463a. *Polymnia Canadensis radiata* A. Gray.**

Specimens with manifest but not conspicuous rays were collected at Glen Echo, July 16, 1897.

***480a. *Helianthus microcephalus* Torr. & Gray.**

Thicket on the slope south of Four Mile Run near Cowdon's, August 8, 1899.

485. *Helianthus decapetalus* L.

Besides the form with thin and ample leaves this has a form with the leaves smaller and firmer; the latter was collected near Cowdon's station.

482. *Helianthus strumosus* L.

Glen Echo railroad, Connecticut Avenue Bridge, bluffs near Little Falls, M street extended near Eastern Branch. Some of the specimens have considerable pubescence on the under side of the leaves, but it is doubtful whether they are the true variety *macrophyllus*.

482. *Helianthus hirsutus* Raf.

There is a well-defined sunflower common in our region for which Britton and Brown's Flora, so far as I can see, makes no provision, but which might very well come under *H. hirsutus* as defined in the Synoptical Flora. According to the latter the stem is "commonly smooth below, rough and hispidulous above", according to the former the stem is "densely hirsute". In our plant, which is of branching habit, the stem is smooth and sometimes glaucous below, or with mere vestiges of roughness, the branching part rough and at the extremities somewhat hirsute. The leaves are broadest near the base and long-tapering, scabrous with prickles above and scabrous-pubescent with sparse white horn-shaped hairs beneath. I have little doubt that the description in the Synoptical Flora was intended to cover a plant essentially the same as ours. That of the Illustrated Flora is more true to Rafinesque, but it leaves our plant without a name.

490. *Coreopsis tinctoria* Nutt.

An occasional escape. South Washington and the Potomac flats dumping ground.

494a. *Bidens connata* Muhl.

Borders of a pond between Arlington and the river, August 24, 1896; Bennings, September 7, 1899.

***494b. *Bidens comosa* (A. Gray) Wiegand.**

Pond below Arlington, September 14, 1896; Jackson City, September 4, 1896; Bladensburg pike, September 16, 1899.

493. *Bidens discoidea* (Torr. & Gray.) Britton. (*Coreopsis* of Ward's Catalogue).

Bennings, in boggy ground on the flats, September 7, 1899.

493a. *Bidens* sp.

A single specimen agreeing with some of the material under *B. aristosa* in the National Herbarium was found on the brink of the water at

Great Falls on the Virginia side, and later a few specimens lower down. It has not yet been determined.

502a. *Chrysanthemum Parthenium* (L.) Pers.

Canal road near Georgetown, July 9, 1899; dump ground, June 5, 1901.

***502e. *Chrysanthemum Balsamita* L.**

Vacant ground, corner of Fifteenth street and Florida avenue, September 1, 1899.

***501a. *Tanacetum vulgare crispum* DC.**

Seventh street road beyond Brightwood, August 2, 1899; seen also at Great Falls. I am not sure that I have seen the type here.

***502d. *Artemisia annua* L.**

Glen Echo, between the carriage and electric roads, September 25, 1897, abundant; also a few specimens in South Washington, about the same date, and later near Eastern Branch at Pennsylvania avenue.

502c. *Artemisia vulgaris* L.

Roadside, Rosslyn, August 8, 1899.

503. *Arnica acaulis* (Walt.) B. S. P. (*A. nudicaulis* of Ward's Catalogue).

Takoma Park, south of the electric road junction, May 19, 1897; seen also on the slope south of Four Mile Run near the Southern railroad, and at a point east of Takoma.

510z. *Arctium tomentosum* (Lam.) Schk.

Dumping ground, river front, June 22, 1898; not common. Our ordinary species seems to be *A. minus* Schk.; *A. Lappa* as now understood I do not find.

517. *Centaurea Calcitrapa* L.

Various places in South Washington; seen also on the Bladensburg pike not far from G street.

***514a. *Carduus nutans* L.**

South Washington, east of gate to the Arsenal grounds, June 23, 1897. I took some pains to destroy the plant, and do not know whether it survived.

512a. *Carduus odoratus* (Muhl.) Porter.

This maintains a precarious existence in Woodley Park.

